

+ **WS 3.1 - Nomenclature** (inorganic)

Greek prefixes:

Case 1 - Nonmetal + Nonmetal

1. First element retains its name.
2. Second element gets **-ide** ending.
3. Use Greek prefixes to identify the # of atoms
(ignore the 1st one if it's a '1')

1-	6-
2-	7-
3-	8-
4-	9-
5-	10-
	1/2-

Examples: $N_2O =$ _____

$SO_3 =$ _____

Now Try These:

carbon dioxide _____

BrF_3 _____

diphosphorus pentasulfide _____

CS_2 _____

Case 2 - 's' block metal + nonmetal (fixed charged metals)

1. Metal retains its name. *• make sure ions join to form a **neutral** compound •*
2. Non-metal retains its ionic name.

Examples: $Na^+ + Cl^- \rightarrow$ _____ name = _____

$Ca^{+2} + Cl^- \rightarrow$ _____ name = _____

+ \rightarrow _____ name = _____

+ \rightarrow _____ name = _____

+ \rightarrow _____ name = _____

Now Try These:

lithium bromide _____

Al_2S_3 _____

magnesium hydroxide _____

$(NH_4)_2SO_3$ _____

aluminum acetate _____

$Ba(NO_3)_2$ _____

Case 3 - variable charge metal + nonmetal

- 1a. Metal gets its charge written w/ Roman # in () after name (w/ *new system*), **-or-**
- 1b. Metal gets Latin name (w/ *old system*).
2. Non-metal retains its ionic name.

Examples: $\text{Fe}^{+2} + \text{Cl}^- \rightarrow$ _____ name = _____ (_____)

$\text{Fe}^{+3} + \text{Cl}^- \rightarrow$ _____ name = _____ (_____)

+ _____ \rightarrow _____ name = _____

+ _____ \rightarrow _____ name = _____

Now Try These:

manganese (IV) chloride _____ $\text{Cr}(\text{OH})_3$ _____

nickel (III) carbonate _____ CuCO_3 _____

Case 4 - Acids (positive ion = "H⁺")

1. Drop the ending on the negative ion.

The **-ate** ending changes to **-ic acid**.

The **-ite** ending changes to **-ous acid**.

The **-ide** ending uses the prefix **hydro-** and the suffix **-ic acid**

Examples: $\text{H}_2\text{CrO}_4 =$ _____

$\text{HNO}_2 =$ _____

$\text{HCl} =$ _____

Now Try These:

hydrobromic acid _____ H_3PO_3 _____

perchloric acid _____ HI _____

"hydrates" when ionic substances have water molecules attached, they're called "hydrates"

$\text{MgSO}_4 \cdot 3 \text{H}_2\text{O} =$ _____

Now Try These:

calcium phosphate tetrahydrate = _____

$\text{NaC}_2\text{H}_3\text{O}_2 \cdot 2 \text{H}_2\text{O} =$ _____